

**Amendments to the Specification:**

Please amend the specification as follows:

Please replace the paragraph at page 1, top, with the following replacement paragraph for federal government research support:

**STATEMENT OF FEDERAL GOVERNMENT RESEARCH SUPPORT**

The subject matter of this application was developed in part with federal government funds from grant no. AFOSR F49620-00-1-0283/P01, DARPA DAAD 19-00-1-0414, and NSF EEC-0118025. The federal government may have certain rights in the invention.

Please replace the first full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 1(a)-(c) ~~provides~~ provide a schematic diagram depicting the patterning of magnetic BaFe nanostructures on silicon oxide. Figure 1(a) An ~~shows an~~ atomic force microscope (AFM) tip coated with a precursor solution of barium ferrite is brought into contact with the silicon oxide substrate. Figure 1(b) The ~~demonstrates how the~~ solution is transferred to the substrate as the tip is traversed across it. Figure 1(c) illustrates how post-annealing ~~Post-annealing~~ yields the desired BaFe nanostructures.

Please replace the second full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 2(a)-(f) ~~provides~~ provide characterization of the bulk BaFe particle samples. Figure 2(a) is XRD pattern of as-synthesized BaFe particles. The indexing is based on tabulated hexagonal BaFe<sub>12</sub>O<sub>19</sub> reflections. Figure 2(b) is XRD spectrum of BaFe particles synthesized without the preheating step. Figure 2(c) Transmission is transmission electron microscope (TEM) image of as-synthesized BaFe particles. Figure 2(d) High is high resolution TEM image showing single crystal nature of these particles. Figure 2(e) Energy-

~~dispersive~~ is energy-dispersive x-ray spectroscopy (EDXS) spectrum obtained from these nanoparticles. The signal for Cu comes from the copper grid on which these particles were supported. Figure 2(f) Magnetic presents magnetic hysteresis measurements of the particles at room temperature.

Please replace the third full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 3(a)-(f) provides provide scanning probe microscope (SPM) studies of the BaFe pattern and x-ray photoelectron spectroscopy (XPS) characterization. Figure 3(a) Topographie is a topographic AFM image of magnetic BaFe lines on the silicon oxide substrate. The speed for the BaFe precursor deposition is 0.2 µm/s. Figure 3(b) Topographie is a topographic AFM image of an array of magnetic bars. The deposition speed is 0.1 µm/s. Figure 3(c) Cross-sectional is a cross-sectional topography trace of a line (marked by the arrows in Figure 3(b). Figure 3(d) Magnetic is a magnetic force microscope (MFM) image obtained from these magnetic bars. Figure 3(e) Barium shows barium peaks were detected from the silicon oxide substrate using XPS. Figure 3(f) Iron shows iron peaks detected from the same sample (inset: oxygen peaks and the deconvolution result).